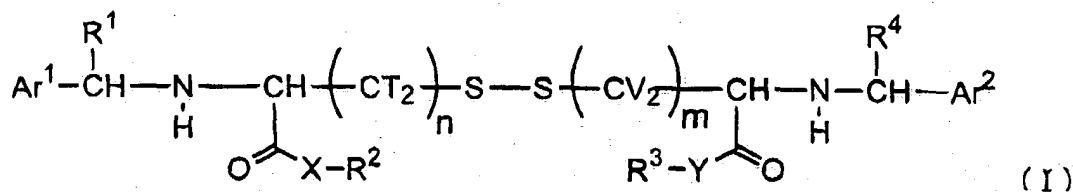


# CLAIMS

1. A cystine derivative represented by formula (I):



wherein

"n" and "m" independently represent an integer of 0 to 5; Ar<sup>1</sup> and Ar<sup>2</sup> independently represent a 2-hydroxyaryl group or a heterocycle-containing group, wherein the heterocycle composing the heterocycle-containing group contains a total of 3 to 14 ring atoms including a total of one to 4 heteroatoms independently selected from the group consisting of oxygen, nitrogen and sulfur, wherein the heterocycle may be wholly or partially saturated or aromatic, and wherein the 2-hydroxyaryl group and the heterocycle-containing group may be independently substituted with at least one substituent selected from the group consisting of: halogen atom, hydroxyl group, cyano group, nitro group, amino group, C<sub>1</sub>-C<sub>20</sub> alkyl group, C<sub>1</sub>-C<sub>4</sub> alkyl group wherein at least a part of the hydrogen atoms is substituted with fluorine atom(s), C<sub>1</sub>-C<sub>6</sub> alkoxy group, C<sub>1</sub>-C<sub>6</sub> hydroxyalkyl group, and C<sub>1</sub>-C<sub>6</sub> aminoalkyl group;

R<sup>1</sup> and R<sup>4</sup> independently represent a substituent selected from the group consisting of hydrogen atom, C<sub>1</sub>-C<sub>6</sub> alkyl group, and phenyl group;

X and Y independently represent O or NH;

R<sup>2</sup> and R<sup>3</sup> independently represent a substituent selected from the group consisting of hydrogen atom, C<sub>1</sub>-C<sub>20</sub> alkyl group, C<sub>7</sub>-C<sub>16</sub> aralkyl group, and C<sub>2</sub>-C<sub>20</sub> unsaturated hydrocarbon group having unsaturated carbon-carbon bond(s) within the molecule; and

the two Ts independently represent hydrogen atom or C<sub>1</sub>-C<sub>6</sub> alkyl group and the two Vs independently represent hydrogen atom or C<sub>1</sub>-C<sub>6</sub> alkyl group, and

wherein the cystine derivative may be in a form selected from the group consisting of a free form, a salt form and a solvate form; and additionally

wherein the cystine derivative may be an optically active substance or a racemic modification.

2. The cystine derivative according to claim 1, wherein the salt is selected from the group consisting of hydrochloride salt, sulfate salt, phosphate salt, nitrate salt, sodium salt, potassium salt, zinc salt and copper salt; and the solvate is a hydrate.

3. The cystine derivative according to claim 1, wherein Ar<sup>1</sup> and Ar<sup>2</sup> are 2-hydroxyphenyl group.

4. The cystine derivative according to claim 3, wherein X and Y are O.

5. The cystine derivative according to claim 1, wherein each "n" and "m" independently represent 1 or 2; the two Ts and the two Vs independently represent hydrogen atom or methyl group; R<sup>1</sup> and R<sup>4</sup> represent hydrogen atom; each X and Y independently represent O or NH; R<sup>2</sup> and R<sup>3</sup> independently represent hydrogen atom or C<sub>1</sub>-C<sub>8</sub> alkyl group; Ar<sup>1</sup> and Ar<sup>2</sup> independently are selected from 2-hydroxyphenyl group, 2-hydroxypyridyl group and pyridyl group, which independently are unsubstituted or are substituted with one or more groups selected from the group consisting of hydroxyl group, C<sub>1</sub>-C<sub>4</sub> alkyl group, C<sub>1</sub>-C<sub>4</sub> alkoxy group, and C<sub>1</sub>-C<sub>3</sub> hydroxyalkyl group.

6. The cystine derivative according to claim 1, which is N,N'-bis(2-hydroxybenzyl)-L-cystine.

7. The cystine derivative according to claim 6, wherein the N,N'-bis(2-hydroxybenzyl)-L-cystine is in any form selected from the group consisting of a dimethyl ester, a diethyl ester, and a diisopropyl ester.

8. A composition for suppressing the activation of inflammatory factor(s), wherein the composition comprises the cystine derivative according to claim 1 as an effective ingredient.

9. The composition for suppressing the activation of inflammatory factor(s) according to claim 8, which is in a form selected from the group consisting of a free form, a salt form, and a solvate form, which are acceptable for pharmaceuticals or cosmetics.

10. The composition for suppressing the activation of inflammatory factor(s) according to claim 8, wherein the inflammatory factor is IL-1 $\alpha$  and/or NF- $\kappa$ B.

11. The composition for suppressing the activation of inflammatory factor(s) according to claim 8, which is in a form suitable for a therapeutic composition for mammals suffering from or being sensitive to a disease involved in the activation of inflammatory factor(s).

12. The composition for suppressing the activation of inflammatory factor(s) according to claim 11, wherein the disease involved in the activation of inflammatory factor(s) is at least one disease selected from the group consisting of acute pain, chronic pain, shock via blood volume decrease, injuries shocks, blood reperfusion disorders, circulative shock, septic shock, systemic inflammation, systemic inflammation syndrome, local inflammation, pneumonia, bronchitis, pancreatitis, cerebral meningitis, encephalitis, ulcerative colitis, inflammatory bowel diseases, dermatitis, nephritis, arthritis, angitis, endocarditis, pleurisy, peritonitis, conjunctivitis, choroiditis, hyperparathyroidism, acne, psoriasis, multiple sclerosis, transplant or graft rejection, autoimmune diseases, adult respiratory distress syndrome, osteoarthritis, rheumatoid arthritis, diabetes mellitus, diabetic neuropathy, diabetic renal disorders, diabetic cataract, atopic dermatitis, ileitis, ulcerative colitis, Crohn's disease, asthma, psoriasis, periodontitis, apical cyst, nephrosis, central nervous system-demyelinating disorders, glaucoma, cataract, macular degeneration, lupus erythematosus, acquired immunodeficiency syndrome-related dementia, acquired immune deficiency syndrome-related complication, Alzheimer's disease, Huntington's disease, Parkinson's disease, neurodegenerative disease, neuron toxicity, migraine, chemical dependence and narcotics, vomiting, epilepsy, anxiety, memory disorders, depression, hyperkinetic syndrome, emotion disorders, aprosexia, schizophrenia, morphine-induced tolerance and withdrawal symptom, head injuries, acute spine injuries, thrombosis, platelet coagulation, atherosclerosis, ischemic cardiac diseases, cardiomyopathy, renal failure, glomerulonephritis, anadrenalism, acute pancreatitis, hyperchlosteremia, arteriosclerosis, osteogenic disorder and osteoporosis, bone diseases involved in the increase of bone resorption, pre-eclampsia, eclampsia, uremia complication, chronic liver failure, stroke, cerebral ischemia, cerebral hemorrhage and cancer.

13. The composition for suppressing the activation of inflammatory factor(s) according to claim 11, where the inflammatory disease is induced by ultraviolet ray.

14. The composition for suppressing the activation of inflammatory factor(s) according to claim 8, which is in a form suitable for oral, parenteral or local dosing.

15. The composition for suppressing the activation of inflammatory factor(s) according to claim 8, which is in a form suitable for eye drops.

16. The composition for suppressing the activation of inflammatory factor(s) according to claim 8, which is in a form suitable for addition to cosmetics.

17. The composition for suppressing the activation of inflammatory factor(s) according to claim 8, which is in a form suitable for an cosmetic application composition or an external skin application composition and may contain one or more carriers for cosmetics application compositions or for external skin application compositions.

18. The composition for suppressing the activation of inflammatory factor(s) according to claim 8, which is in a form selected from the group consisting of a food, a drink, a nutrition agent, and a transfusion dosage.

19. The composition for suppressing the activation of inflammatory factor(s) according to claim 8, wherein the cystine derivative of formula (I) is N,N'-bis(2-hydroxybenzyl)-L-cystine.

20. The cystine derivative according to claim 19, wherein the N,N'-bis(2-hydroxybenzyl)-L-cystine is in any form selected from the group consisting of a dimethyl ester, a diethyl ester, and a diisopropyl ester.

21. A method for preventing, ameliorating and/or therapeutically treating inflammatory disease involved in the activation of inflammatory factor(s), comprising administering to a subject in need thereof an effective amount of a composition comprising the cystine derivative according to claim 1.

22. The method according to claim 21, wherein said inflammatory disease causes a skin change via aging or causes an aesthetically unfavorable change as induced or promoted by inflammatory factor(s).

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23. The method according to claim 21, wherein the skin change via aging or the aesthetically unfavorable change as induced or promoted by inflammatory factor(s) is skin wrinkle, looseness and/or pigmentation induced or promoted by sunlight, ultraviolet ray in sunlight and/or ultraviolet ray from other light source.

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24. The method according to claim 21, wherein said composition further comprises at least one additive selected from the group consisting of anti-oxidant, anti-inflammatory agent, ultraviolet absorbent, whitening agent, cell activator, moisturizing agent, and metal chelator.

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25. The method according to claim 21, wherein the disease involved in the activation of inflammatory factor(s) is at least one disease selected from the group consisting of acute pain, chronic pain, shock via blood volume decrease, injuries shocks, blood reperfusion disorders, circulative shock, septic shock, systemic inflammation, systemic inflammation syndrome, local inflammation, pneumonia, bronchitis, pancreatitis, cerebral meningitis, encephalitis, ulcerative colitis, inflammatory bowel diseases, dermatitis, nephritis, arthritis, angitis, endocarditis, pleurisy, peritonitis, conjunctivitis, choroiditis, hyperparathyroidism, acne, psoriasis, multiple sclerosis, transplant or graft rejection, autoimmune diseases, adult respiratory distress syndrome, osteoarthritis, rheumatoid arthritis, diabetes mellitus, diabetic neuropathy, diabetic renal disorders, diabetic cataract, atopic dermatitis, ileitis, ulcerative colitis, Crohn's disease, asthma, psoriasis, periodontitis, apical cyst, nephrosis, central nervous system-demyelinating disorders, glaucoma, cataract, macular degeneration, lupus erythematosus, acquired immunodeficiency syndrome-related dementia, acquired immune deficiency syndrome-related complication, Alzheimer's disease, Huntington's disease, Parkinson's disease, neurodegenerative disease, neuron toxicity, migraine, chemical dependence and narcotics, vomiting, epilepsy, anxiety, memory disorders, depression, hyper kinetic syndrome, emotion disorders, aprosexia, schizophrenia, morphine-induced tolerance and withdrawal symptom, head injuries, acute spine injuries, thrombosis,

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platelet coagulation, atherosclerosis, ischemic cardiac diseases, cardiomyopathy, renal failure, glomerulonephritis, anadrenalism, acute pancreatitis, hypercholesterolemia, arteriosclerosis, osteogenic disorder and osteoporosis, bone diseases involved in the increase of bone resorption, pre-eclampsia, eclampsia, uremia complication, chronic liver failure, stroke, cerebral ischemia, cerebral hemorrhage and cancer.

26. The method according to claim 21, wherein the cystine derivative of formula (I) is N,N'-bis(2-hydroxybenzyl)-L-cystine.

27. A method for suppressing the activation of inflammatory factor(s), comprising administering to a subject in need thereof an effective amount of a composition comprising the cystine derivative according to claim 1.

28. The method according to claim 27, wherein said composition is in a form selected from the group consisting of a pharmaceutical product, a food, a drink, and a cosmetic.

29. The method according to claim 27, wherein said suppressing the activation of inflammatory factor(s) comprises therapeutically treating, ameliorating and/or preventing a disease involved in the activation of inflammatory factor(s).

30. The method according to claim 27, wherein said suppressing the activation of inflammatory factor(s) comprises preventing, delaying, ameliorating and/or therapeutically treating skin change via aging or aesthetically unfavorable skin change as induced or promoted by inflammatory factor(s).

31. The method according to claim 27, wherein the cystine derivative of formula (I) is N,N'-bis(2-hydroxybenzyl)-L-cystine.